



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,149	09/26/2003	Selena Chan	INTEL1250-1(P13830X)	6083

7590 04/21/2006

LISA A. HAILE, Ph.D.
ATTORNEY FOR INTEL CORPORATION
GRAY CARY WARE & FREIDENRICH LLP
4365 Executive Drive, Suite 1100
San Diego, CA 92121-2133

EXAMINER

WILDER, CYNTHIA B

ART UNIT	PAPER NUMBER
----------	--------------

1637

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,149

Applicant(s)

CHAN ET AL.

Examiner

Cynthia B. Wilder, Ph.D.

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment filed 12/12/2005 is acknowledged and has been entered. Claims 26-30 have been amended. Claims 31-33 have been added. Claims 1-33 are pending. Claims 1-25 have been withdrawn from consideration as being drawn to a non-elected invention. All of the arguments have been thoroughly reviewed and considered but are not found persuasive for the reasons discussed below. Any rejection not reiterated in this action has been withdrawn as being obviated by the amendment of the claims.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Applicant's election with traverse of Group II drawn to claims 26-30 in the reply filed on September 13, 2005 is acknowledged. The traversal is on the ground(s) that the Office Action has failed to show that the alleged groups are distinct. Applicant asserts that it the recitation of "by hand" as an example of a materially different product that the apparatus could be use for any method in which detection is performed with flow through cells, ranging from oligonucleotide synthesis to nucleic acid sequencing to detection by PCR is improper. Applicant states that it is unlikely, if not impossible to detect Raman signaling as claimed by hand at the nanoscale level. Applicant asserts that the limitation "by hand" does not exemplify a process using the product as claimed that can be practice with another product. Applicant asserts that secondly, it is not clear how Raman signaling as claimed would be used to detect oligonucleotide signaling products, especially as the nanoscale level. Applicant further contends that it is not clear why one would employ and apparatus that uses nanoscale detection of an object by Raman signaling of detection

Art Unit: 1637

of the object has already been accomplished by PCR. Applicant states that these examples eliminate, leave only nucleic acid sequence, which is not a materially different process of using the product as claimed. Finally, Applicant request that the restriction requirement be withdrawn and the alleged inventions rejoined.

All of the arguments have been thoroughly been reviewed and considered, but are not found persuasive for the following reasons. In response to Applicant's arguments that the limitation that the process of Group I could be practice by a materially different product or "by hand" is improper, the Examiner respectfully disagree. Specially, the process as claimed in Group I is drawn to a method of sequencing nucleic acids which have been shown to be performed by numerous other procedures, such as by hand using recombinant nucleic acid techniques or by Southern blotting. Other techniques for nucleic acid sequencing as stated in the prior Office action may include the use of amplification techniques such as PCR or by automated techniques encompassing fluorescent-base detection. As stated in the prior Office Action, nucleic acid sequence may be performed by hand using recombinant nucleic acid DNA techniques or by Southern blotting techniques. The apparatus, which includes a Raman detector, may be used in numerous other methodologies, besides in the method of determining a nucleic acid sequences. These methodologies may include use in structural biosynthesis of amino acids, determining bond lengths in non-polar molecules, and determining the identity of organic and inorganic species in solution. These different inventions are both independent and patentably distinct one from the other. Therefore, the requirement is still deemed proper and is therefore made FINAL.

Art Unit: 1637

Previous rejections

4. The claim rejections under 35 USC 112 second paragraph are withdrawn in view of Applicant's amendment. The prior art rejections under 35 USC 102(e) are withdrawn in view of Applicant's amendment. The prior art rejections under 35 USC 103(a) are withdrawn in view of Applicant's amendment. The double patenting rejection is maintained and discussed below.

Double Patenting

Rejection: Provisional double patenting in view of 10/099287.

Applicant's traversal

5. Applicant traverses the rejection on the following on the following ground: Applicant states that while not acquiescing to the reasoning offered in the Office Action, and to expedite prosecution towards allowance, Applicant have provided herein a terminal disclaimer in compliance with 37 C.F.R. 1.321(c).

Examiner response

6. The examiner acknowledges Applicant submission of a terminal disclaimer. However, it is noted that the serial number of the application cited therein (10/108,128) is not the serial number of the application recited in the claimed double patenting rejection. Likewise, the serial number of the application recited in Applicant's arguments (10/299,287) is not the serial number of the application recited in the rejection. The claims 26, 27, 29-30 are provisionally rejected under the judicially created doctrine of double patenting over claims 24, 25, 27-30 of copending application no. 10/099,287. Accordingly, the rejection is maintained.

Art Unit: 1637

New Grounds of Rejection

THE NEW GROUNDS OF REJECTIONS WERE NECESSITATED BY APPLICANT'S AMENDMENT OF THE CLAIMS:

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 26-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Kneipp et al (US 2005/0003376 A1, effective filing date February 1998). Regarding claims 26 and 27, Kneipp et al teach an apparatus comprising a reaction chamber, a first channel in fluid communication with the reaction chamber; a second channel in fluid communication with the first channel; a plurality of cross0linked nanoparticles aggregates affixed¹ (page 5, paragraph 0052) within the second channel, wherein the aggregates enhance Raman signaling; and a Raman detector operable coupled to the nanoparticles affixed channel, wherein the Raman detector operable coupled to the nanoparticle affixed channel is capable of detecting single nucleotide molecules interacting with the affixed nanoparticles aggregates (page 4, paragraphs 0047-0049, 0056 and page 14, claims 173-179).

¹ Kneipp et al teaches that the nanoparticle aggregates may be deposited or immobilized onto the surface.

Art Unit: 1637

Regarding claim 28, Kneipp et al teach the apparatus of claim 26, further a first electrode and a second electrode move nucleotides from the first channel into the second channel (page 14, claim 175).

Regarding claims 29 and 30, Kneipp et al teach apparatus of claim 26, wherein the first channel is a microfluidic channel and inherently implies that the second channel is a nanochannel based on the fact that nanoparticles are deposited therein (page 5, paragraph 0052, page 14, claims 173-178).

Regarding claim 31 and 32, Kneipp et al teach the apparatus of claim 26, wherein the portion of nanoparticle aggregates comprises a plurality (at least 2 or more) of metal particles referred to as a "cluster" (page 3 and 4, paragraph 0045).

Regarding claim 33, Kneipp et al teach the claim of 31, wherein the nanoparticles comprising the aggregates comprises gold and/or silver (page 13, claim 129), and the nanoparticles are between 500 nm to about 5 μ m to 1 μ m in size (page 4, col. 2, lines 19-21).

Therefore, Kneipp et al meets the limitation of the instant invention as claimed.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 1637

10. Claims 26, 27, 29-30 are provisionally rejected under the judicially created doctrine of double patenting over claims 26-30 of copending Application No. 11/270211. An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F. 2d 887, 225 USPQ 645 (fed. Cir. 1985). Thus, the claims 26-33 of the instant invention falls entirely within the scope of the claims 26-30 of copending application 11/270211. As the court stated in *In re Goodman*, 29 USPQ2d 2010 (CAFC 1993), " a second application-- "containing a broader claim, more generic in its character than the specific claim in the prior patent"--typically cannot support an independent valid patent. *Miller*, 151, U.S. at 198; See *Stanley*, 214 F.2d at 153. Thus, the generic invention, as noted above is "anticipated" by the species of the patented invention. Cf., *Titanium metal corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (holding that an earlier species disclosure in the prior art defeats any generic claims). This court's predecessor has held that, without a terminal disclaimer, the species claims preclude issuance of the generic application. "*In re Van Ornum*, 686 F.2d 937, 944, 214 USPQ 761, 767 (CCPA 1982); *Schneller*, 397 F.2d at 354".

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Art Unit: 1637

Conclusion

11. No claims are allowed. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia B. Wilder, Ph.D. whose telephone number is (571) 272-0791. The examiner works a flexible schedule and can be reached by phone and voice mail. Alternatively, a request for a return telephone call may be emailed to cynthia.wilder@uspto.gov. Since email communications may not be secure, it is suggested that information in such request be limited to name, phone number, and the best time to return the call.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Cynthia Wilder
CYNTHIA WILDER
PATENT EXAMINER
4/10/2006